WHAT IS CLAIMED IS:

1. An oil cooler structure of an automatic transmission comprising an upper tube plate reinforcement and a lower tube plate reinforcement each arranged in a layer in an oil passage formed between a plane part of an upper tube plate and a plane part of a lower tube plate and respectively welded to said upper tube plate reinforcement and said lower tube plate reinforcement and embossed parts thereof protruding toward the center of said oil passage being mutually abutted and welded together.

2. The structure as defined in claim 1, wherein said upper and lower tube plate reinforcements are formed longitudinally in said oil passage along a width direction of said plane parts.

3. The structure as defined in claim 1, wherein said upper and lower tube plate reinforcements comprise:

welded coupling surfaces respectively abutted and welded to surfaces of said plane parts extended from said oil passage; and

embossed parts protruding from a central portion of welded coupling surfaces and distanced from said plane parts and protruding toward a center of said oil passage.

4. The structure as defined in claim 3, wherein said embossed parts are formed with straight plane parts and connected via slanted surfaces to the welded coupling surfaces.

5. The structure as defined in claim 1, wherein one marginal surface of said upper and lower tube plate reinforcements are arched, and other three marginal surfaces thereof are formed straight along longitudinal and cross-wise directions of said plane parts.